

**Notice of Allowability**

Application No.

10/081,657

Applicant(s)

LEE ET AL.

Examiner

Art Unit

Patrick J Connolly

2877

Pw

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☒ The drawings filed on 21 February 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                               | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date ____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material         | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other ____.   |

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Lester Vincent on June 08, 2004.

The application has been amended as follows:

Amendment to claim 6:

6. The method of claim 1, wherein detecting an optical output of the tunable optical filter comprises:

applying the optical output of the tunable optical [fiber] filter to a photodetector;

applying an electrical output from the photodetector to a lock-in detector;

generating an electrical signal having a third frequency, wherein the third frequency is a multiple of the second frequency;

generating a phase-shifted electrical signal by phase-shifting the electrical signal having the third frequency;

applying an electrical signal having a third frequency to the lock-in detector,

monitoring an output of the lock-in detector.

## **DETAILED ACTION**

### ***Allowable Subject Matter***

Claims 1-16 allowed.

The following is an examiner's statement of reasons for allowance:

As to claim 1, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for enhancing a resolving power of a tunable filter including: applying to the tunable filter an electrical signal having a first component with a first frequency and a second component with a second frequency, wherein the second frequency is higher than the first frequency, in combination with the rest of the limitations of claim 1.

As to claim 8, the prior art of record, taken alone or in combination, fails to disclose or render obvious an apparatus including: circuitry that combines a first component and second component to generate an electrical signal having two frequencies, the second frequency being higher than the first; and circuitry that applies the electrical signal as an electrical tuning input to a tunable optical filter, in combination with the rest of the limitations of claim 8.

As to claim 12, the prior art of record, taken alone or in combination, fails to disclose or render obvious an apparatus including: means for applying a combination of a first and second electrical signals to tunable optical filtering means, wherein the frequency of the second electrical signal is higher than that of the first, in combination with the rest of the limitations of claim 12.

As to claim 14, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method including: applying an optical input to a tunable optical filter while a combination of a first and second electrical signal is being applied to the tunable filter; applying

Art Unit: 2877

the optical output of the tunable filter to a photodetector; coupling an electrical output from the photodetector to a lock-in detector; and coupling a third, phase shifted electrical signal to the lock-in detector, wherein the third electrical signal has a frequency double the second electrical signal, in combination with the rest of the limitations of claim 14.

Art Unit: 2877


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J Connolly whose telephone number is 571.272.2412. The examiner can normally be reached on 9:00 am - 7:00 pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pjc PJC  
06.08.2004



Samuel A. Turner  
Primary Examiner